

ABSTRACT OF THE DISCLOSURE

Disclosed herein is an ink-jet recording process for conducting recording by ejecting a pigment ink and a reaction liquid containing a polyvalent metal salt from a recording section, in which a plurality of nozzles for ejecting the pigment ink and the reaction liquid are arranged, to a recording medium while relatively scanning the recording section to the recording medium, comprising the steps of ejecting the pigment ink having a surface tension lower than that of the reaction liquid to the reaction liquid ejected on the surface of the recording medium; and forming a filmy aggregate by gathering of agglomerates at an interface where the reaction liquid has come into contact with the pigment ink, wherein conditions for ejecting the reaction liquid to a prescribed area on the recording medium when at least the print duty of the ink in the prescribed area is 100% satisfy the relationship of

$$55 \times \frac{0.85 \times 10^6 \times Vd(pl)^{-0.61}}{Rx(dpi)Ry(dpi)} \leq duty(\%) \leq 125 \times \frac{0.85 \times 10^6 \times Vd(pl)^{-0.61}}{Rx(dpi)Ry(dpi)}$$

wherein $Vd(pl)$ is an ejection volume per dot of the reaction liquid, $Rx(dpi)$ is a print resolution in the direction of the relative scanning, $Ry(dpi)$ is a print resolution in the arrangement direction of the nozzles, and $duty(\%)$ is a print duty of the reaction liquid.